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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/556,579      | 04/24/2000  | Anders Eriksson      | 34645-00505USPT     | 7205             |

38065 7590 08/15/2005

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EXAMINER

GANTT, ALAN T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2684

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/556,579             | ERIKSSON ET AL.     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Alan T. Gantt          | 2684                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Response to Arguments***

Applicant's arguments filed 5/9/05 have been fully considered but they are not persuasive. Applicant primarily argues that the Ozawa reference does not teach that use of two noise suppressor used in combination and that nothing in Ozawa indicates that the noise suppressor taught in Figure 3 "giving a second amount of noise suppression level for further suppressing the noise suppressed signal received from said first device to said destination device as described in claim 1. Applicant argues that Ozawa teaches a first embodiment of noise suppression which is capable of suppressing a noise signal before encoding and that Ozawa teaches a second embodiment but that the second embodiment is a completely separate embodiment which would make the 102 rejection improper. With regards to the 103 rejection, applicant continually argues that none of the introduced prior art resolves the overall noise suppression system and does not argue beyond those points.

In reviewing the Ozawa reference, Ozawa does specify that his invention can be used either on pre-processing or on post processing of the speech signal. Ozawa does state that "herein, it is assumed that a speech signal is given in the form of a sequence of digital speech signals to be subject to pre-processing and post-processing to suppress a noise signal from the speech signal" (page 3 lines 2-4). Ozawa further states that "this invention enables to suppress the noise signal on a waveform by the use of the feature parameters and is applicable to both the pre-processing and the post-processing (page 3, lines 33-35). Thus, embodied in these statements is the belief that Ozawa views a complete system both pre and post processing of one occurrence. Ozawa does state that the description made as regards to a principle of the

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inventions as to facilitate an understanding of the invention (page 3, lines 1 and 2). Thus, the examiner feels that Ozawa did intend his invention to have as use as a complete communication system that suppresses noise from the origin to the destination. Thus, the 102 and 103 Rejections stand.

The 35 U.S.C. 112 rejection as related to cancelled claims 40-46 as well as claims 1, 20, and 33 is now moot based on applicant's removal of the wording dealing with optimizing a linear combination of first and second amount of noise suppression levels that were felt not to be supported by the specification. However, a 35 U.S.C. 112 Rejection is maintained for claims 34-39 because of a lack of antecedent basis for the optimization language. With the removal of this optimizing a linear combination language from claim 33, claim 34 lacks antecedent basis for the language "wherein the optimization is performed as a function of transmission characteristics". All claims dependent on claim 34 are also improper. Claim 37 has the same issue with respect to independent claim 20.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 34 recites the limitation "wherein the optimization is performed as a function of transmission characteristics" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. Claims 35, 36, 38, and 39 depend from claim 34 and also rejected.

Claim 37 recites the limitation " wherein the optimization is performed as a function of transmission characteristics " in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**8. Claims 1, 6 - 8, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa (Ozawa, European Patent Application Number 655,731).**

Regarding claim 1, Ozawa teaches of in a telecommunications system having voice communications subject to noise, a distributed noise suppression system for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 -27), said noise suppression system comprising: a first noise suppressor, within a first device, for suppressing noise received by said first device prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 -43 and page 7, lines 22 -27), and a second noise suppressor, within said destination device, for further suppressing the noise-suppressed signal received from said first device to said destination device, whereby the noise associated with said given one of said voice communications is reduced by an overall amount of noise suppression level (Figure 3 and page 6, lines 33 - 40., and page 7, lines 22 -27).

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Regarding claim 6, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa further teaches of comprising: an encoder, within said first device and attached to said first noise suppressor, for encoding said noise-suppressed signal from said first noise suppressor prior to transmission to said destination device (Figure 1 and page 3, lines 27 - 31).

Regarding claim 7, Ozawa teaches all the claimed limitations as recited in claim 6.

Ozawa further teaches of comprising: a decoder, within said destination device and attached to said second noise suppressor, for decoding said noise-suppressed signal received from said transmitter prior to said second noise suppressor (Figure 3 and page 6, lines 33 - 40).

Regarding claim 8, Ozawa teaches all the claimed limitations as recited in claim 7.

Ozawa further teaches of wherein said noise-suppressed signal received from said transmitter prior to said second suppressor is subject to signal distortion caused by low bit-rate speech encoding by said encoder (page 3, lines 10 - 17), and wherein said second noise suppressor is tuned to suppress said signal distortion (page 6, lines 41 - 50).

Regarding claim 18, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa further teaches of wherein said first and second noise suppressors employ respective algorithms therein tuned to the respective noises encountered (Figures 2 and 4 and starting page 43, line 43 and ending page 6, line 33 and starting page 6, line 51 and ending page 7, line 15).

Regarding claim 19, Ozawa teaches all the claimed limitations as recited in claim 18.

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Ozawa further teaches of wherein the first and second noise suppression algorithms adapt dynamically to the respective noises encountered (Figures 2 and 4 and starting page 43, line 43 and ending page 6, line 33 and starting page 6, line 51 and ending page 7, line 15).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 2, 4, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Romesburg (Romesburg, WIPO No. 97/34290).**

Regarding claim 2, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa does not specifically teach of wherein said first device is a mobile terminal.

In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is a mobile terminal (Figure 3 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 4, Ozawa teaches all the claimed limitations as recited in claim 1.

Ozawa does not specifically teach of wherein said destination device is a mobile telephone.

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In a related art dealing with noise suppression, Romesburg teaches of wherein said destination device is a mobile telephone (Figure 3 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 15, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications is acoustic.

In a related art dealing with noise suppression, Romesburg teaches of wherein the noise associated with said given one of said voice communications is acoustic (Figure 3 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

**11. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Romesburg (Romesburg, WIPO No. 97/34290) and Voit (Voit, US Patent No. 6,075,783).**



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Regarding claim 3, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein said first device is selected from the group consisting of a microphone, terminal, PC, Internet device, and a transmission system. In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is selected from the group consisting of a microphone, terminal, and a transmission system (Figure 3 and page 1 1, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg. Ozawa in view of Romesburg does not specifically teach of a PC and Internet device. In a related art dealing with the use of mobile communications, Voit teaches of PC and Internet device (Figure 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression system, Voit's VOIP system, for the accommodating the use of communicating with a computer terminal via a wireless unit (and vise versa) as taught by Voit.

Regarding claim 5, Ozawa teaches all the claimed limitations as recited in claim 1 . Ozawa does not specifically teach of wherein said first device is selected from the group consisting of a microphone, terminal, PC, Internet device, and a transmission system. In a related art dealing with noise suppression, Romesburg teaches of wherein said first device is selected from the group consisting of a loudspeaker, terminal, and a transmission

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system (Figure 3 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Ozawa in view of Romesburg does not specifically teach of a PC and Internet device.

In a related art dealing with the use of mobile communications, Voit teaches of PC and Internet device (Figure 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression system, Voit's VOIP system, for the accommodating the use of communicating with a computer terminal via a wireless unit and vice versa) as taught by Voit.

**12. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further Page 12 in view of Aoki et al. (Aoki, US Patent No. 5,933,506).**

Regarding claim 9, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB.

In a related art dealing with noise reduction, Aoki teaches of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB (starting column 7, line 66 and ending column 8, line 3).

It would have been obvious to one skilled in the art at the time of invention to have

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included into Ozawa's noise suppression's technique, Aoki's suppression limits, for the purposes of reducing added noise at a specified level, as taught by Aoki.

Regarding claim 10, Ozawa in view of Aoki teaches all the claimed limitations as recited in claim 9. Aoki further teaches of wherein the noise is reduced by said first suppressor by about 8 to 10 dB (starting column 7, line 66 and ending column 8, line 3).

**13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Aoki et al. (Aoki, US Patent No. 5,933,506) as applied to claim 10 above, and further in view of Foulkes et al (Foulkes, US Patent No. 3,560,669).**

Regarding claim 11, Ozawa in view of Aoki teaches all the claimed limitations as recited in claim 10. Ozawa in view of Aoki, do not specifically teach of wherein the noise is reduced by said first suppressor by about 8 dB (though it should be noted that Aoki teaches of 3 to 10 dB and 8 is in that range).

In a related with echo suppression, Foulkes teaches of wherein the noise is reduced by said first suppressor by about 8 dB (column 11, lines 2 - 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Aoki's noise suppression's technique, Foulkes suppression limits, for the purposes of suppressing noise by a specified level, as taught by Foulkes.

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**14. Claims 12 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Dolby (Dolby, US Patent No. 3,665,345).**

Regarding claim 12, Ozawa teaches all the claimed limitations as recited in claim 1 .

Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB.

In a related art dealing with noise reduction, Dolby teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 II.B (column 2, lines 67 - 70).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Dolby's suppression limits, for the purposes of suppressing noise by a specified level, as taught by Dolby.

Regarding claim 13, Ozawa in view of Dolby teach all the claimed limitations as recited in claim 12. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 2 to 8 dB (column 2, lines 67 - 70).

Regarding claim 14, Ozawa in view of Dolby teach all the claimed limitations as recited in claim 12. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 6 dB (column 2, lines 67 - 70).

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**15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Suvanen et al. (Suvanen, US Patent No. 6,081,732).**

Regarding claim 16, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal.

In a related art dealing with echo noise elimination, Suvanen teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal (column 7, lines 44 -46).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Suvanen's encoder noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Suvanen.

**16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) as applied to claim 1 above, and further in view of Ferrer et al. (Ferrer, US Patent No. 6,115,589).**

Regarding claim 17, Ozawa teaches all the claimed limitations as recited in claim 1. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal.

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In a related art dealing with audio noise suppression, Ferrer teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal (column 2, lines 27 - 42).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression's technique, Ferrer's channel added noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Ferrer.

**17. Claims 20 - 23, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) in view of Romesburg (Romesburg, WIPO No. 97/34290).**

Regarding claim 20, Ozawa teaches of in a telecommunications system having voice communications subject to noise, suppression means for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 -27), comprising: a first noise suppressor for suppressing noise prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 -43 and page 7, lines 22 -27); and a second noise suppressor for suppressing a received noise-suppressed signal received from a transmitting device having a first noise suppressor therein, whereby the noise associated with said given one of said voice communications is reduced by an overall amount noise of noise suppression level. (Figure 3 and page 6, lines 33 - 40., and page 7, lines 22 -27).

Ozawa does not specifically teach of a mobile telephone having suppression means or

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received by said mobile telephone. In a related art dealing with noise suppression, Romesburg teaches of a mobile telephone having suppression means (Figure 3 and page 11, lines 15 - 23) or received by said mobile telephone (Figures 3 and 4 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

Regarding claim 21, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa further teaches of comprising: an encoder, attached to said first noise suppressor, for encoding said noise-suppressed signal from said first noise suppressor prior to transmission to said destination device (Figure 1 and page 3, lines 27 - 31).

Regarding claim 22, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa further teaches of comprising: a decoder, attached to said second noise suppressor, for decoding said received noise-suppressed signal received from said transmitting device prior to said second noise suppressor (Figure 3 and page 6, lines 33 - 40).

Regarding claim 23, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 22. Ozawa further teaches of wherein said noise-suppressed signal received from said transmitter prior to said second suppressor is subject to signal distortion caused by low bit-rate speech encoding by said encoder, and wherein said second noise suppressor is tuned to suppress said signal distortion (Figure 3 and page 6, lines 33 - 40).

Regarding claim 30, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Romesburg further teaches of wherein the noise associated with said given one of said voice communications is acoustic (Figure 3 and page 11, lines 15 - 23).

Regarding claim 33, Ozawa teaches of in a telecommunications system having voice communications subject to noise, a method for suppressing said noise for a given one of said voice communications (Figures 1 and 3 and page 7, lines 22 -27), said method comprising the steps of noise suppressing, by a first noise suppressor, noise received by a first device prior to transmission of the noise-suppressed signal to a destination device (Figure 1 and page 3, lines 36 -43 and page 7, lines 22 -27); and further noise suppressing, by a second noise suppressor within said destination device, said noise-suppressed signal received from said first device (Figure 3 and page 6, lines 33 - 40; and page 7, lines 22 -27). Ozawa does not specifically teach of acoustic noise.

In a related art dealing with noise suppression, Romesburg teaches of acoustic noise (Figure 3 and page 11, lines 15 - 23).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa's noise suppression system, Romesburg's mobile system, for the purposes of added noise suppression in a changing, mobile environment, as taught by Romesburg.

**18. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg**



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**(Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Aoki et al. (Aoki, US Patent No. 5,933,506).**

Regarding claim 24, Ozawa in view of Romesburg, teach all the claimed limitations as recited in claim 20. Ozawa, in view of Romesburg do not specifically teach of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB.

In a related art dealing with noise reduction, Aoki teaches of wherein the noise associated with said given one of said voice communications is reduced by said first suppressor by about 6 to 14 dB (starting column 7, line 66 and ending column 8, line 3).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Aoki's suppression limits, for the purposes of reducing added noise at a specified level, as taught by Aoki.

Regarding claim 25, Ozawa in view of Romesburg and Aoki, teach all the claimed limitations as recited in claim 24. Aoki further teaches of wherein the noise is reduced by said first suppressor by about 8 to 10 dB (starting column 7, line 66 and ending column 8, line 3).

**19. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and in view of Romesburg (Romesburg, WIPO No. 97/34290) and Aoki et al. (Aoki, US Patent No. 5,933,506) as applied to claim 25 above, and further in view of Foulkes et al (Foulkes, US Patent No. 3,560,669).**

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Regarding claim 26, Ozawa in view of Romesburg and Aoki teach all the claimed limitations as recited in claim 25. Ozawa and Romesburg in View of Aoki, do not specifically teach of wherein the noise is reduced by said first suppressor by about 8 dB (though it should be noted that Aoki teaches of 3 to 10 dB and 8 is in that range).

In a related with echo suppression, Foulkes teaches of wherein the noise is reduced by said first suppressor by about 8 dB (column 11, lines 2 - 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa, Romesburg, and Aoki's noise suppression's technique, Foulkes suppression limits, for the purposes of suppressing noise by a specified level, as taught by Foulkes.

**20. Claims 27 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Dolby (Dolby, US Patent No. 3,665,345).**

Regarding claim 27, Ozawa in view of Romesburg teach all the claimed limitations as recited in claim 20. Ozawa and Romesburg do not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB.

In a related art dealing with noise reduction, Dolby teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is further reduced by said second suppressor by about 1 to 10 dB (column 2, lines 67 - 70).

It would have been obvious to one skilled in the art at the time of invention to have included in Ozawa and Romesburg's noise suppression's technique, Dolby's suppression limits, for the purposes of suppressing noise by a specified level, as taught by Dolby.

Regarding claim 28, Ozawa in view of Romesburg and Dolby, teach all the claimed limitations as recited in claim 27. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 2 to 8 dB (column 2, lines 67 - 70).

Regarding claim 29, Ozawa in view of Romesburg and Dolby, teach all the claimed limitations as recited in claim 28. Dolby further teaches of wherein the noise is reduced by said second suppressor by about 6 dB (column 2, lines 67 - 70).

**21. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) a.s applied to claim 20 above, and further in view of Suvanen et al. (Suvanen, US Patent No. 6,081,732).**

Regarding claim 31, Ozawa and Romesburg teach all the claimed limitations as recited in claim 20. Ozawa and Romesburg do not teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from an encoding of said noise-suppressed signal.

In a related art dealing with echo noise elimination, Suvanen teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first

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noise suppressor, is from an encoding of said noise-suppressed signal (column 7, lines 44 -46).

It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Suvanén's encoder noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Suvanén.

**22. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (Ozawa, European Patent Application Number 655,731) and Romesburg (Romesburg, WIPO No. 97/34290) as applied to claim 20 above, and further in view of Ferrer et al. (Ferrer, US Patent No. 6,115,589).**

Regarding claim 32, Ozawa and Romesburg teach all the claimed limitations as recited in claim 20. Ozawa does not specifically teach of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal.

In a related art dealing with audio noise suppression, Ferrer teaches of wherein the noise associated with said given one of said voice communications, after suppression by said first noise suppressor, is from transmission of said noise-suppressed signal (column 2, lines 27 - 42). It would have been obvious to one skilled in the art at the time of invention to have included into Ozawa and Romesburg's noise suppression's technique, Ferrer's channel added noise, for the purposes of reducing all sources of noise generated in the audio path, as taught by Ferrer.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication from the examiner should be addressed to Alan Gantt at telephone number (703) 305-0077. The examiner can normally be reached between 9:30 AM and 6 PM within the Eastern Time Zone. The group FAX number is (703) 872-9306.

Any inquiry of a general nature or relating to this application should be directed to the group receptionist at telephone number (703) 305-4700.

*Alan T. Gantt*  
Alan T. Gantt

*N. L. Maung*  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**

August 7, 2005